



[4910-13-P]

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2013-0542; Directorate Identifier 2011-NM-162-AD]

RIN 2120-AA64

Airworthiness Directives; The Boeing Company Airplanes

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: We propose to supersede an existing airworthiness directive (AD) that applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. The existing AD currently requires repetitive inspections for discrepancies of each carriage spindle of the outboard mid-flaps; repetitive gap checks of the inboard and outboard carriages of the outboard mid-flaps to detect fractured carriage spindles; measuring to ensure that any new or serviceable carriage spindle meets minimum allowable diameter measurements taken at three locations; repetitive inspections, measurements, and overhaul of the carriage spindles; replacement of any carriage spindle when it has reached its maximum life limit; and corrective actions if necessary. Since we issued that AD, we received a report of failure of both flap carriages. This proposed AD would require reducing the life limit of the carriages, reducing the repetitive interval for certain inspections and gap checks for certain carriages. This proposed AD would also add an option, for certain replacements, of doing an inspection, and related investigative and corrective actions if necessary. We are proposing this AD to detect and correct cracked, corroded, or fractured carriage spindles, which could lead to severe flap asymmetry, and could result in reduced control or loss of controllability of the airplane.

DATES: We must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <http://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this proposed AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Examining the AD Docket

You may examine the AD docket on the Internet at <http://www.regulations.gov>; or in person at the Docket Management Facility between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this proposed AD, the regulatory evaluation, any comments received, and other information. The street address for the Docket Office (phone: 800-647-5527) is in the ADDRESSES section. Comments will be available in the AD docket shortly after receipt.

FOR FURTHER INFORMATION CONTACT: Nancy Marsh, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6440; fax: (425)917-6590; email: nancy.marsh@faa.gov.

SUPPLEMENTARY INFORMATION:

Comments Invited

We invite you to send any written relevant data, views, or arguments about this proposed AD. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2013-0542; Directorate Identifier 2011-NM-162-AD” at the beginning of your comments. We specifically invite comments on the overall regulatory, economic, environmental, and energy aspects of this proposed AD. We will consider all comments received by the closing date and may amend this proposed AD because of those comments.

We will post all comments we receive, without change, to <http://www.regulations.gov>, including any personal information you provide. We will also post a report summarizing each substantive verbal contact we receive about this proposed AD.

Discussion

On July 14, 2010, we issued AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), for all Model 737-100, -200, -200C, -300, -400, and -500 series airplanes. That AD requires repetitive inspections to find discrepancies (cracks, fractures, and corrosion) of each carriage spindle of the left and right outboard mid-flaps; repetitive gap checks of the inboard and outboard carriages of the outboard mid-flaps to detect fractured carriage spindles; measuring to ensure that any new or serviceable carriage spindle meets minimum allowable diameter measurements taken at three locations; repetitive inspections, measurements, and overhaul of the carriages;

replacement of any carriage when it has reached its maximum life limit; and corrective actions if necessary. That AD resulted from reports of fractures that resulted from stress corrosion and pitting along the length of the carriage spindle and spindle diameter. We issued that AD to detect and correct cracked, corroded, or fractured carriage spindles, and to prevent severe flap asymmetry, which could result in reduced control or loss of controllability of the airplane.

Actions Since Existing AD (75 FR 43803, July 27, 2010) was Issued

Since we issued AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), we received a report of failure of both flap carriages on an outboard flap of a Model 737 airplane, which indicates that life limits and certain repetitive inspection intervals of the carriages mandated by existing AD 2010-15-08 should be reduced.

Relevant Service Information

AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), referred to Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; and Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009; as the appropriate sources of service information for the required actions. Boeing has since revised these service bulletins.

We reviewed Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, which describes reduced repetitive intervals for the non-destructive test (NDT) ultrasonic inspection and general visual inspection of the carriage spindle, and gap check measurements of the inboard and outboard carriages.

The related investigative actions of Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, include removing the carriage from service and performing a detailed inspection for corrosion, cracking, or a severed spindle; determining if there is damage that would cause the midflap to move away from the carriage.

Corrective actions of Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, include installing a new or serviceable inboard or outboard carriage of the outboard mid-flaps.

We also reviewed Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, which shortens the life limit and compliance time for the replacement of spindles from 48,000 total flight cycles to 40,000 total accumulated flight cycles.

The related investigative actions of Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, include performing a detailed inspection for corrosion and pitting, performing a magnetic particle inspection for cracking, and measuring for minimum allowable spindle diameter. Corrective actions of Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, include installing a new or serviceable inboard and outboard carriage of the outboard mid-flaps; overhauling carriages to remove corrosion or repair damage; and replacing any carriage that has cracking, or damage beyond the repair limits for minimum allowable spindle diameters, or reached its life limit.

Explanation of Changes to Existing Requirements of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)

Paragraphs (i) and (k) of existing AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), require installing a new or serviceable carriage spindle if certain conditions are found. In this proposed AD, when these certain conditions are found, rather than installing a new or serviceable carriage spindle, operators now have the option to first do a detailed inspection to determine if there is corrosion, cracking, or a severed spindle, and do related investigative and corrective actions if necessary. Therefore, we revised paragraphs (i) and (k) of this proposed AD, to include these optional actions. We have also added an exception to paragraph (i) of this proposed AD to specify that actions in that paragraph are not necessary for

carriage spindles on which an ultrasonic inspection of the spindle has been done and the spindle has been confirmed not to be severed.

We have revised paragraph (m) of this AD to remove the reference to Chapter 20-42-09, Electrodeposited Nickel Plating, of the Boeing (737) Standard Overhaul Practices Manual, and we removed the reference that as of August 31, 2010, the effective date of AD 2010-15-08, Amendment 39, 16374 (75 FR 438003) to use only Boeing (737) Standard Overhaul Practices Manual, Revision 25, dated July 1, 2009.

Instead, application of nickel plating done in accordance with a method approved by the Manager, Seattle Aircraft Certification Office (ACO), FAA, is acceptable for compliance with the actions required by paragraph (m) of this AD. We added Note 1 to paragraph (m) of this AD to specify that guidance on the application of nickel plating can be found in Chapter 20-42-09, Electrodeposited Nickel Plating, of the Boeing (737) Standard Overhaul Practices Manual, Revision 25, dated July 1, 2009.

We have also added paragraph (m)(3) to prohibit the application of any plating to the carriage using any high velocity oxygen fuel (HVOF) thermal spray process.

We have also clarified the compliance time for the repetitive actions specified in paragraph (n) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010).

FAA's Determination

We are proposing this AD because we evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of these same type designs.

Proposed AD Requirements

This proposed AD would retain all requirements of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010). This proposed AD also would require accomplishing the actions specified in the service information described previously. This proposed AD would also shorten certain compliance times.

Costs of Compliance

We estimate that this proposed AD affects 652 airplanes of U.S. registry.

We estimate the following costs to comply with this proposed AD:

Estimated costs

Action	Labor cost	Parts cost	Cost per product	Cost on U.S. operators
Inspections [retained actions from existing AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)]	12 work-hours X \$85 per hour = \$1,020	\$0	\$1,020 per inspection cycle	\$665,040 per inspection cycle
Inspections and measurements [retained actions from existing AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)]	2 work-hours X \$85 per hour = \$170	\$0	\$170 per inspection and measurement cycle	\$110,840 per inspection and measurement cycle
Overhauls [retained actions from existing AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)]	16 work-hours X \$85 per hour = \$1,360	\$28,000 ¹	\$29,360 per overhaul cycle	\$19,142,720 per overhaul cycle
Replacements [retained actions from existing AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)]	16 work-hours X \$85 per hour = \$1,360	\$60,000 ²	\$61,360 per replacement cycle	\$40,006,720 per replacement cycle

¹ \$7,000 per spindle; 4 spindles per airplane.

² \$15,000 per spindle; 4 spindles per airplane.

The new requirements of this proposed AD add no additional economic burden.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, Section 106, describes the authority of the FAA Administrator. Subtitle VII, Aviation Programs, describes in more detail the scope of the Agency's authority.

We are issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701, "General requirements." Under that section, Congress

charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

We have determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that the proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Is not a “significant rule” under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979),
- (3) Will not affect intrastate aviation in Alaska, and
- (4) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Proposed Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by removing airworthiness directive (AD) 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), and adding the following new AD:

The Boeing Company: Docket No. FAA-2013-0542; Directorate Identifier 2011-NM-162-AD.

(a) Comments Due Date

The FAA must receive comments on this AD action by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

This AD supersedes AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010).

(c) Applicability

This AD applies to all The Boeing Company Model 737-100, -200, -200C, -300, -400, and -500 series airplanes, certificated in any category.

(d) Subject

Joint Aircraft System Component (JASC)/Air Transport Association (ATA) of America Code 57: Wings.

(e) Unsafe Condition

This AD was prompted by reports of fractures that resulted from stress corrosion and pitting along the length of the spindle and spindle diameter, and a subsequent report of failure of both flap carriages. We are issuing this AD to detect and correct cracked, corroded, or fractured carriage spindles, which could lead to severe flap asymmetry, and could result in reduced control or loss of controllability of the airplane.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Compliance Times for Paragraphs (h) and (j) of this AD

This paragraph restates the requirements of paragraph (g) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information that shortens the compliance times for certain inspections. The tables in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; and Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012; specify the compliance times for paragraphs (g) through (k) of this AD. For carriage spindles that have accumulated the number of flight cycles or years in service specified in the “Threshold” column of the tables in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003, accomplish the gap check, nondestructive test (NDT) inspection, and general visual inspection specified in paragraphs (h) and (j) of this AD within the corresponding interval after December 4, 2003 (the effective date AD 2003-24-08, Amendment 39-16337 (68 FR 67027, December 1, 2003)), as specified in the “Interval” column of the tables in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003, except as specified in paragraphs (g)(1) and (g)(2) of this AD. Repeat the gap check, NDT, and general visual inspections at the intervals specified in the “Interval” column of the tables in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003, except as specified in paragraph (g)(1) and (g)(2) of this AD. As of the effective date of this AD, accomplish the gap check, NDT inspection, and general visual inspections specified in paragraphs (h) and (j) of this AD within the corresponding interval as specified in the “Interval” column of the tables in paragraph 1.E., “Compliance,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003, and thereafter at the intervals specified in Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, except as specified in paragraphs (g)(1) and (g)(2) of this AD. Repeat the gap check, NDT, and general visual

inspections thereafter at the intervals specified in the “Interval” column of the tables in paragraph 1.E., “Compliance,” of Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, except as specified in paragraphs (g)(1) and (g)(2) of this AD.

(1) The gap check does not have to be done at the same time as an NDT inspection; after doing an NDT inspection, the interval for doing the next gap check may be measured from the NDT inspection.

(2) As carriage spindles gain flight cycles or years in service and move from one category in the “Threshold” column to another, they are subject to the repetitive inspection intervals corresponding to the new threshold category.

(h) Retained Work Package 2: Gap Check

This paragraph restates the requirements of paragraph (h) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information. Perform a gap check of the inboard and outboard carriage of the left and right outboard mid-flaps to determine if there is a positive indication of a severed carriage spindle, in accordance with Work Package 2 of paragraph 3.B., “Work Instructions,” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; or Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(i) Retained Work Package 2: Corrective Actions with New Optional Actions and Exception

This paragraph restates the requirements of paragraph (i) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information and new optional actions and exception. If there is a positive indication of a severed carriage spindle during the gap check required by paragraph (h) of this AD, before further flight, do the actions specified in paragraph (i)(1) or (i)(2) of this AD, except for carriage spindles on which an ultrasonic inspection has been done in accordance with the “Work

Instructions” of Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012; and the spindle has been confirmed not to be severed, no further actions are required by this paragraph for that carriage spindle.

(1) Remove the carriage spindle and install a new or serviceable carriage spindle, in accordance with the “Work Instructions” of any service bulletin specified in paragraph (i)(1)(i), (i)(1)(ii), (i)(1)(iii), or (i)(1)(iv) of this AD. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(i) Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003.

(ii) Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012.

(iii) Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009.

(iv) Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011

(2) Do a detailed inspection of the spindle to determine if there is corrosion, cracking, or a severed spindle, and, before further flight, do all related investigative and corrective actions, in accordance with the “Work Instructions” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; or Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012. If, during the detailed inspection described in paragraph 4.b. of Work Package 2 of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003, or Revision 3, dated May 16, 2012, a carriage spindle is found not to be severed, and no corrosion and no cracking is present, it can be reinstalled on the outboard mid-flap, in accordance with any service bulletin specified in paragraph (i)(2)(i), (i)(2)(ii), (i)(2)(iii), or (i)(2)(iv) of this AD. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(i) Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003.

(ii) Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012.

(iii) Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009.

(iv) Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011

(j) Retained Work Package 1: NDT (Ultrasonic) and General Visual Inspections

This paragraph restates the requirements of paragraph (j) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information. Perform an NDT (ultrasonic) inspection and general visual inspection for each carriage spindle of the left and right outboard mid-flaps to detect cracks, corrosion, or severed carriage spindles, in accordance with “Work Package 1” of the “Work Instructions” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; or Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(k) Retained Work Package 1: Corrective Actions and New Optional Action

This paragraph restates the requirements of paragraph (k) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information and new optional action. If any corroded, cracked, or severed carriage spindle is found during any inspection required by paragraph (j) of this AD: Before further flight, do the actions specified in paragraph (k)(1) or (k)(2) of this AD.

(1) Remove the carriage spindle and install a new or serviceable carriage spindle, in accordance any service bulletin identified in paragraph (k)(1)(i), (k)(1)(ii), (k)(1)(iii), or (k)(1)(iv) of this AD. As of the effective date of this AD, only Boeing

Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(i) Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003.

(ii) Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012.

(iii) Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009.

(iv) Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011

(2) Do a detailed inspection of the spindle to determine if there is corrosion, cracking, or a severed spindle, in accordance with the “Work Instructions” of Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; or Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012. If any corrosion, cracking, or a severed spindle is found, before further flight, install a new or serviceable carriage spindle, in accordance any service bulletin identified in paragraph (k)(1)(i), (k)(1)(ii), (k)(1)(iii), or (k)(1)(iv) of this AD. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, may be used to perform the actions specified in this paragraph.

(l) Retained Parts Installation Limitation

This paragraph restates the requirements of paragraph (l) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010). Except as provided in paragraph (i) of this AD: As of December 4, 2003 (the effective date AD 2003-24-08, Amendment 39-16337 (68 FR 67027, December 1, 2003), no person may install on any airplane a carriage spindle that has been removed as required by paragraph (i) or (k) of this AD, unless it has been overhauled in accordance with the “Work Instructions” of the applicable service bulletin identified in paragraph (l)(1), (l)(2), (l)(3), or (l)(4) of this AD. As of the effective date of this AD, only Boeing Service Bulletin 737-57A1277,

Revision 3, dated May 16, 2012; or Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011; may be used to perform the actions specified in this paragraph. To be eligible for installation under this paragraph, the carriage spindle must have been overhauled in accordance with the requirements of paragraph (m) of this AD.

(1) Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003.

(2) Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012.

(3) Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009.

(4) Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011.

(m) Retained Electrodeposited Nickel Plating with New Plating Restrictions

This paragraph restates the requirements of paragraph (m) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010) with revised plating application procedures. As of the effective date of this AD, during accomplishment of any overhaul specified in paragraph (l) or (o) of this AD, follow the requirements specified in paragraphs (m)(1), (m)(2), and (m)(3) of this AD during application of the plating to the carriage spindle, in accordance with a method approved by the Manager, Seattle, Aircraft Certification Office (ACO), FAA. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(1) The maximum deposition rate of the nickel plating in any one plating/baking cycle must not exceed 0.002-inch-per-hour.

(2) Begin the hydrogen embrittlement relief bake within 10 hours after application of the nickel plating, or less than 24 hours after the current was first applied to the part, whichever is first.

(3) The carriage must not be plated using any high velocity oxygen fuel (HVOF) thermal spray process.

Note 1 to paragraph (m) of this AD: Guidance on the application of nickel plating can be found in Chapter 20-42-09, Electrodeposited Nickel Plating, of the Boeing (737) Standard Overhaul Practices Manual, Revision 25, dated July 1, 2009.

(n) Retained Exception to Reporting Recommendations

This paragraph restates the provisions of paragraph (n) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information. Although Boeing Alert Service Bulletin 737-57A1277, Revision 1, dated November 25, 2003; and Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012; recommend that operators report inspection findings to the manufacturer, this AD does not require reporting.

(o) Retained Inspections, Measurements, and Overhauls of the Carriage Spindle with Clarification of Overhaul Restrictions

This paragraph restates the requirements of paragraph (o) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010) with clarification of overhaul restrictions. At the applicable times specified in paragraphs (o)(1) and (o)(2) of this AD: Do the detailed inspection for corrosion, pitting, and cracking of the carriage spindle; magnetic particle inspection for cracking of the carriage spindle; measurements of the spindle to determine if it meets the allowable minimum diameter; overhauls of the carriage spindle; and applicable corrective actions; in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009; or Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011. As of the effective date of this AD, only Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, may be used to perform the actions specified in this paragraph. The applicable corrective actions must be done before further flight. Repeat these actions thereafter

at intervals not to exceed every 12,000 flight cycles on the carriage spindle or every 8 years since first installation of the carriage spindle on the airplane, whichever comes first. As of the effective date of this AD: For any overhaul required by this paragraph, the carriage spindle must be overhauled in accordance with the requirements of paragraph (m) of this AD.

(1) For Model 737-100, -200, -200C series airplanes: At the later of the times specified in paragraphs (o)(1)(i) and (o)(1)(ii) of this AD.

(i) Before the accumulation of 12,000 total flight cycles on the carriage spindle since new or overhauled, or within 8 years after the installation of the new or overhauled part, whichever comes first.

(ii) Within 1 year after August 31, 2010 (the effective date of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)).

(2) For Model -300, -400, and -500 series airplanes: At the later of the times specified in paragraphs (o)(2)(i) and (o)(2)(ii) of this AD.

(i) Before the accumulation of 12,000 total flight cycles on the carriage spindle since new or overhauled, or within 8 years after the installation of the new or overhauled part, whichever comes first.

(ii) Within 2 years after August 31, 2010 (the effective date of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)).

(p) Retained Carriage Spindle Replacement for Model 737-100, -200, and -200C Series Airplanes

This paragraph restates the requirements of paragraph (p) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information and a shortened compliance time. For Model 737-100, -200, -200C series airplanes: Replace the carriage spindle with a new or documented (for which the service life, in total flight cycles, is known) carriage spindle, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1218,

Revision 5, dated February 9, 2009; or Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011; at the earlier of the times specified in paragraphs (p)(1) and (p)(2) of this AD, except as required by paragraph (r) of this AD. As of the effective date of this AD, only Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, may be used to perform the replacement. Overhauling the carriage spindles does not zero-out the flight cycles. Total flight cycles accumulate since new.

(1) At the later of the times specified in paragraphs (p)(1)(i) and (p)(1)(ii) of this AD.

(i) Before the accumulation of 48,000 total flight cycles on the new or overhauled carriage.

(ii) Within 3 years or 7,500 flight cycles after August 31, 2010 (the effective date of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)), whichever occurs first.

(2) Before the accumulation of 40,000 total flight cycles on the new or overhauled carriage or 6 months after the effective date of this AD, whichever occurs later.

(q) Retained Carriage Spindle Replacement for Model 737-300, -400, and -500 Series Airplanes

This paragraph restates the requirements of paragraph (q) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised service information and a shortened compliance time. For Model 737-300, -400, and -500 series airplanes: Replace the carriage spindle with a new or documented (for which the service life, in flight cycles, is known) carriage spindle, in accordance with the Accomplishment Instructions of Boeing Alert Service Bulletin 737-57A1218, Revision 5, dated February 9, 2009; or Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011; at the later of the times specified in paragraphs (q)(1)

and (q)(2) of this AD, except as required by paragraph (r) of this AD. As of the effective date of this AD, only Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, may be used to perform the replacement required by this paragraph. Overhauling the carriage spindles does not zero-out the flight cycles. Total flight cycles accumulate since new.

(1) Before the accumulation of 40,000 total flight cycles on the new or overhauled carriage.

(2) Within 6 years or 15,000 flight cycles after August 31, 2010 (the effective date of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)), whichever occurs first.

(r) Retained Carriage Spindle Replacement for Airplanes with an Undocumented Carriage

This paragraph restates the requirements of paragraph (r) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010). For airplanes with an undocumented carriage: Do the applicable actions specified in paragraph (p) or (q) of this AD at the applicable time specified in paragraph (r)(1) or (r)(2) of this AD.

(1) For Model 737-100, -200, -200C series airplanes: Do the actions specified in paragraph (p) of this AD at the time specified in paragraph (p)(1)(ii) of this AD.

(2) For Model -300, -400, and -500 series airplanes: Do the actions specified in paragraph (q) of this AD at the time specified in paragraph (q)(2) of this AD.

(s) Retained Repetitive Replacements of Carriage Spindle

This paragraph restates the requirements of paragraph (s) of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), with revised compliance times.

(1) For airplanes on which the actions required by paragraph (p) or (q) of this AD, as applicable, have been done as of the effective date of this AD: Repeat the replacement of the carriage spindle specified by paragraph (p) or (q) of this AD, as applicable, one time at the later of the times specified in paragraphs (s)(1)(i) and

(s)(1)(ii) of this AD, and thereafter at intervals not to exceed 40,000 total flight cycles on the new or overhauled carriage spindle.

(i) Before the accumulation of 40,000 total flight cycles on the new or overhauled carriage.

(ii) Within 6 years or 15,000 flight cycles after August 31, 2010 (the effective date of AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010)), whichever occurs first.

(2) For airplanes on which the actions required by paragraph (p) or (q) of this AD, as applicable, have not been done as of the effective date of this AD: Repeat the replacement of the carriage spindle specified by paragraph (p) or (q) of this AD, as applicable, thereafter at intervals not to exceed 40,000 total flight cycles on the new or overhauled carriage spindle.

(t) Exception to Compliance Time

Where Boeing Service Bulletin 737-57A1277, Revision 3, dated May 16, 2012, and Boeing Alert Service Bulletin 737-57A1218, Revision 6, dated June 9, 2011, specify a compliance time after the dates of those service bulletins, this AD requires compliance within the specified compliance time after the effective date of this AD.

(u) Credit for Previous Actions

This paragraph provides credit for actions required by paragraphs (g) through (s) of this AD, if those actions were performed before the effective date of this AD using Boeing Alert Service Bulletin 737-57A1277, Revision 2, dated June 9, 2011, which is not incorporated by reference in this AD.

(v) Alternative Methods of Compliance (AMOCs)

(1) The Manager, Seattle Aircraft Certification Office (ACO), FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the ACO, send it to the attention of the person identified in the Related Information section of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair required by this AD if it is approved by the Boeing Commercial Airplanes Organization Designation Authorization (ODA) that has been authorized by the Manager, ACO, to make those findings. For a repair method to be approved, the repair must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

(4) AMOCs previously approved in accordance with AD 2003-24-08, Amendment 39-13377 (68 FR 67027, December 1, 2003), or AD 2010-15-08, Amendment 39-16374 (75 FR 43803, July 27, 2010), are approved as AMOCs for individual repairs are acceptable for compliance with the corresponding provisions of this AD. All other existing AMOCs are not acceptable.

(w) Related Information

(1) For more information about this AD, contact Nancy Marsh, Aerospace Engineer, Airframe Branch, ANM-120S, FAA, Seattle Aircraft Certification Office (ACO), 1601 Lind Avenue SW., Renton, WA 98057-3356; phone: (425) 917-6440; fax: (425) 917-6590; email: nancy.marsh@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Data & Services Management, P. O. Box 3707, MC 2H-65, Seattle, Washington 98124-2207; telephone 206-544-5000, extension 1; fax 206-766-5680; email me.boecom@boeing.com; Internet <https://www.myboeingfleet.com>. You may review copies of the referenced service information at the FAA, Transport Airplane Directorate, 1601 Lind Avenue SW., Renton, Washington. For information on the availability of this material at the FAA, call 425-227-1221.

Issued in Renton, Washington, on June 14, 2013.

Jeffrey E. Duven,
Acting Manager,
Transport Airplane Directorate,
Aircraft Certification Service.

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